CLAIMS

What is claimed is:

1.   A system, comprising:

a voice quality tester (VQT) generating a calling signal over a network; and

an automated voice responder unit (VRU), without any external I/O control performing a port setup and a call control and waiting for the calling signal from the VQT across the network under test, and performing functions allowing the VQT server to conduct voice quality tests on the network.

2.   The system as recited in claim 1, wherein the VQT and the autonomous VRU operate synchronously without a control connection with the autonomous VRU.

3.   The system as recited in claim 1, wherein the VQT and the autonomous VRU are synchronized using an In-band synchronization by passing tone pulses back and forth between the autonomous VRU and the VQT in a prescribed pattern of tone and silence until the autonomous VRU and the VQT are synchronized.

4.   The system as recited in claim 1, further comprising:

a VQT responder, wherein the VQT comprises at least one of first VQT server and a second VQT server, and the autonomous VRU comprises at least one of a first autonomous VRU and a second autonomous VRU, where

the first autonomous VRU is operatively connected to the first VQT server through the network to allow the first VQT server to generate an echo score of the network without any external I/O control, and

the second autonomous VRU is operatively connected to the VQT responder through the network to allow the VQT responder to determine a roundtrip delay by providing a loop back signal of the network without any external I/O control.

5.   The system as recited in claim 1, wherein, upon receipt of the calling signal, the autonomous VRU and the VQT establish a communication circuit through the network.

6.   The system as recited in claim 3, wherein when the VQT server outputs a waveform as a reference file, across the communication circuit, the autonomous VRU receives and stores the waveform and outputs the received waveform back to the VQT server, which

receives and records the waveform as a test file, where the reference and test files are compared using to determine voice quality measures comprising MOS, delay, echo, and/or attenuation of the network.

7.   The system as recited in claim 6, wherein the VQT determines that the problem exists from the VQT to the autonomous VRU when the reference file matches the test file from the VRU or that the problem exists from the autonomous VRU to the VQT when the reference file does not match the test file from the VRU.

8.   A system, comprising:
a voice quality tester (VQT) generating a calling signal over a network; and
an automated voice responder unit (VRU), without any external I/O control, except through the network, performing a port setup and a call control and waiting for the calling signal from a voice quality tester (VQT) client/server, synchronizing with the VQT server, and performing functions allowing the VQT server to conduct voice quality tests of the network, wherein the autonomous VRU and the VQT comprise a first task list and a second task list, respectively.

9.   The system as recited in claim 8, wherein the first task list of the autonomous VRU applies port setup and a call control and waits for the calling signal from the VQT server to set-up a communication circuit between the autonomous VRU and the VQT server through the network.

10.   The system as recited in claim 9, wherein after establishing the communication circuit between the VQT and autonomous VRU, the task list stored in the VRU performs a loop back function to allow the VQT to perform a roundtrip delay test on the communication circuit.

11.   The system as recited in claim 8, wherein the second task list allows the autonomous VRU to omit a control connection and coordinate with the VQT through In-band synchronization.

12.   The system as recited in claim 8, wherein the first and second task lists are synchronized using an In-band synchronization by passing tone pulses back and forth between autonomous VRU and the VQT in a prescribed pattern of tone and silence until the autonomous VRU and the VQT are synchronized.

13.   A method of an autonomous VRU connected to a network, comprising:
without any external I/O control, except through the network, performing a port setup and a call control and waiting for a calling signal from a voice quality tester (VQT), and performing functions allowing the VQT server to conduct voice quality tests of the network.

14.   The method as recited in claim 13, further comprising:
without any external I/O control, upon receipt of the phone call, serially executing a task list comprising functions to allow the VQT to perform the voice quality tests of the network, and, once the voice quality tests are completed, waiting for another phone call from the VQT to again perform the functions in the task list.

15.   The method as recited in claim 13, further comprising:
without any external I/O control, except through the network, waiting for a synchronization signal from the VQT, and automatically performing a series of predefined states to synchronize the autonomous VRU with the VQT server upon receipt of the synchronization signal over the network.

16.   The method as recited in claim 13, further comprising:
upon receipt of the calling signal and without any external I/O control, except through the network, establishing a communication circuit between the autonomous VRU and the VQT through the network.

17.   The method as recited in claim 13, further comprising:
without any external I/O control, except through the network, receiving and storing a waveform as a reference file from the VQT across the network, and outputting the received waveform back to the VQT server, which receives and records the waveform as a test file, wherein the reference and test files are compared using to determine voice quality measures comprising MOS, delay, echo, and/or attenuation of the network.

18. The system as recited in claim 13, further comprising:

without any external I/O control, except through the network, operating synchronously with the VQT to exclude a control connection.

19. The method as recited in claim 13, further comprising:

without any external I/O control, except through the network, synchronizing with the VQT using an In-band synchronization by passing tone pulses back and forth between the autonomous VRU and the VQT in a prescribed pattern of tone and silence.

20. The method as recited in claim 16, further comprising:

after establishing the communication circuit and without any external I/O control, performing a loop back function to allow the VQT to perform a roundtrip delay test on the communication circuit through the network.